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Management Model Presenting for the Continuation of Activities and Services After the Crisis (Case Study: The Headquarters of Tehran Water and Wastewater Company District 3)

Gholamreza Nabi Bidhendi^{1*}, Aghil Olya²

1 Department of Environmental Engineering, School of Environment, College of Engineering, University of Tehran, Tehran, Iran

2 Department of Crisis Management, Research Institute of Shakhsh Pajouh, Isfahan, Iran

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Abstract

Decreased quality and lack of access to safe drinking water after a natural disaster can worsen crisis time problems; Therefore, the continuation of activities and services in the event of a natural emergency such as an earthquake can help a lot in crisis management and cause the city to return to normal quickly. In this study, after stating the theoretical foundations in the category of crisis management and standards of the business continuity plan, the headquarters of Tehran Water and Wastewater Company District 3, which has been selected as a case study. Attempts have been made to study the principles of BS-25999 standards, the British Standards Institution about the business continuity plan, to extract the desired indicators for the company's headquarters and then to provide the required data by presenting the questionnaire and analyzing the results of the questionnaire through SPSS19 and Expertchoice11 software and Continue the localization plan for this study. At the end of the project, the business continuity plan after the earthquake in the headquarters of Tehran Water and Wastewater Company District 3, has been proposed. In which necessary measures have been taken to continue the activities, before, during, and after the accident and the organizational chart and the description of the duties of each of them, so that the company is ready to face the crisis.

Keywords: BS-25999 standard, Business continuity plan, Crisis management, Earthquake, Tehran Region 3 Water and Sewerage Company Headquarters.

* Corresponding author

Email: ghhendi@ut.ac.ir

Extended abstract**Introduction**

Water and residue companies, both urban and rural, are legally responsible for providing adequate safe drinking water. Disruption of water quality and its distribution can be caused by emergencies such as natural disasters, distress, and deliberate actions. Any disruption in quality and access to safe drinking water after a natural disaster can cause widespread disruption in the city and add to problems during a crisis; Therefore, the continuation of the activities and services of this unit during a natural disaster such as an earthquake can help a lot in crisis management and increase the flexibility of the city and cause the rapid return of the city to its normal state.

The Business Continuity Plan strives to provide the organization with the appropriate response and timely response to the crisis to bring the organization to a level of readiness that can provide services to its customers in the shortest possible time and based on pre-defined plans. Resume and, at best, go through the transition from a critical situation to a normal one. Proper implementation of this plan, while creating the ability to react and respond appropriately to crises and reduce the time to return to normal, can achieve various achievements such as expanding the preventive approach instead of passive in the face of crisis, reducing insurance costs, creating a sense of trust and reliability, providing customers, users, and related organizations and significantly reduce the direct and indirect costs of a crisis.

One of the most important factors in increasing or decreasing the amount of damage and the number of human losses during natural disasters is the presence or absence of a crisis management system. One of the methods that can be used to prepare and compile crisis management and planning principles, and recently used in books written on crisis management, is to use the comprehensive process of crisis management and its phases to classify and present principles. In this model, crisis management principles are divided into four phases (prevention and reduction of effects, preparedness, coping, recovery), which include both planning and management.

Materials and Methods

In this study, library studies, reference to relevant organizations and field visits, and interviews with experts on urban issues and crisis management have been used. Analysis hierarchical process (AHP) has also been used for the required analyzes. First, the general framework of the extraction plan has been extracted using library studies and the use of international experience in the field of post-disaster Business Continuity Plan. Then, questionnaires were designed to fill this sample and localize it for the headquarters of Water and Wastewater Company District 3 of Tehran. After compilation, these questionnaires were distributed among experts active in the field of crisis management, water, and wastewater in the city of Tehran's District 3. In the first part of this questionnaire, the necessary measures to continue the activities before, during, and after the accident in the headquarters area of Tehran Water and Wastewater Company District 3 have been questioned. After collecting the questionnaires, this part of the questionnaire was analyzed through SPSS 19 software and a two-sentence test. The output of this test is included in the Business Continuity Plan. In the second part of the questionnaire, through the hierarchical structure, the person in charge of accident management and management in the company, as well as alternative sites for the continuation of the company's activities and services after the accident, were questioned. Experts have rated the questionnaires based on the AHP principles. Finally, using the Expert Choice 11 software and analyzing the data given by the experts, the options that

have the highest score for this question have been identified. The use of qualitative and quantitative criteria, as well as the ability to adapt to judgments, are features that determine the AHP method to determine the coefficient of the importance of the parameters used in the research, to identify and select a suitable alternative site and project command to continue ABFA headquarters activities after the Earthquakes show. The first step in the hierarchical analysis process is to create a hierarchical structure of the subject matter in which the goals, criteria, options, and relationships between them are demonstrated. The next steps in the hierarchical analysis process that will be used in this research are weight calculation (coefficient of importance) of criteria, calculation of weight (coefficient of importance) of options (different types of alternative sites and different people for project command responsibility) and finally, logical compatibility review of judgments.

Discussion of Results

In this study, a responsible organizational chart is presented. It's necessary to take a series of measures in places and buildings that are important or have a higher level of vulnerability in terms of performance, to take the first steps to deal with, and respond in the same place in critical or emergencies. To determine the crisis command was experts evaluated the Business Continuity Plan approach, parameters such as the individual's organizational strength to command in times of crisis and better performance and efficiency in times of crisis. Scoring and prioritization were done using the AHP method. The results of this analysis, which were obtained by entering the requested information from 10 experts in the Expertchoice11 software, show that the head of Water and Wastewater Company District 3 of Tehran, has been selected as the best person to command the crisis from the experts' point of view.

The correct and appropriate response to a crisis in the organization requires a team to lead and support response and recovery operations. Team members must be selected from experienced and trained staff who are aware of their responsibilities. The number and scope of teams' activities can include command and control teams, which include a crisis management team and a response, continuity or recovery management team, and operational teams.

To select an alternative site for the continuation of Water and Wastewater Company District 3 of Tehran's organizational life, parameters such as organizational policy, cost of equipment and maintenance, earthquake vulnerability, and maximum allowable time for the company's inactivity were evaluated by experts and options based on AHP guidelines. They scored points against each other. These scores were then entered into the Expertchoice 11 software and analyzed. The obtained results showed that the experts gave the maximum score to the hot site, and the warm site is in second place. The first step in the Business Continuity Plan should include an organizational structure that often takes the form of a committee that ensures the executive guarantee of senior executives and defines the role of senior executives and their responsibilities after studying and review the BS-25999 standard. And the localization of this standard, based on the organizational criteria of the Water and Wastewater Company, led to the introduction of a committee to continue activities and services before the crisis and a responsible organizational chart at the time of the crisis.

Conclusions

Predicting and determining an alternative site to continue the company's activities after the crisis is an important issue in the Business Continuity Plan. Among the options and according to the

appropriate criteria, as well as questions from relevant experts and scoring based on AHP principles and analysis and analysis of the results of the questionnaire with the software Expertchoice 11, the hot site was selected as the best site to continue the activities and services of Tehran Water and Wastewater Company District 3. A hot site is a well-equipped and multi-purpose site that also has staff at the time before the accident. This site can be activated in the shortest time after the accident, and in the time before the accident, administrative activities can be performed in it. For the continuity plan to always be up-to-date and scalable, it must be continuously tested and revised, as provided in the 2-year timeframe for this issue.